home SMC 20 Sensor Module Instruction Manual

Contents

home SMC 20 Sensor Module

Product Specifications

- **Model:** SMC 20 2E4-1
- **Compatible Battery Types:** 6 Volt and 12 Volt lead-acid (LEAD ACID, WET), gel (GEL), VRLA GEL, AGM, MF, Li-ion, LiFePO4

Product Usage Instructions

Preparation:
Always read the instruction manual carefully before use. Make sure to disconnect the charger from the mains before connecting to or disconnecting from the battery. Store the charger in a safe, freeze-proof place when not in use and periodically recharge as recommended.

Connecting the Battery and Charger:

1. Disconnect the charger from the power supply by unplugging it from the wall socket.
2. Check the polarity of the battery contacts (red: positive (+), black: negative (-)).
3. Connect the clip-on connector cable to the charger cable.
4. Attach the positive clip (+/red) to the positive terminal of the battery.
5. Attach the negative clip (-/black) to the negative terminal of the battery.
6. Plug the power cord into the mains.
7. The display will show if the battery is connected incorrectly or if it is faulty.
8. Select the desired charging mode (battery type) by pressing the MODE button.

Charging Process:
If charging needs to be paused or interrupted, unplug the power cord from the wall. Charging can be resumed later without losing progress. If the battery is left connected during an interruption, charging will resume from where it stopped. After 60 hours of unsuccessful charging, the charger will indicate if the battery cannot be fully charged.

FAQ

- **Which batteries are compatible with this charger?**
  The charger is compatible with 6 Volt and 12 Volt lead-acid (LEAD ACID, WET), gel (GEL), VRLA GEL, AGM, MF, Li-ion, and LiFePO4 batteries.

- **What should I do if an error message displays?**
  Follow the instructions provided for each error message. For example, in case of reverse battery polarity, replace the + / – wires. If the battery voltage cannot be detected, ensure that the battery is functional and undamaged.

IMPORTANT SAFETY INSTRUCTIONS

READ THE INSTRUCTION MANUAL CAREFULLY BEFORE USE AND RETAIN IT FOR LATER REFERENCE!

WARNINGS

- Please read and keep the following instructions before using the product. The original instructions are in Hungarian language. This device should be used by persons with reduced physical, sensory or mental capabilities, or lacking experience and knowledge, and children aged 8 years and over, only if they are under supervision or instructed in the use of the device and understand the hazards involved in its safe use. Children should not play with the device. After unpacking, make sure that the appliance has not been damaged in transit. Keep children away from the packaging if it contains bags or other dangerous components.
- Please read this guide carefully before using and keep it in a safe place for future reference.
- WARNING! ALWAYS DISCONNECT FROM THE MAINS BEFORE CONNECTING OR DISCONNECTING FROM THE BATTERY!
- IP65: Fully protected against dust and low pressure water jets from all directions.
- The charger is resistant to moisture, but the power plug is not protected. For use in dry, indoor conditions only!
- It should only be connected to a standard 230 V~ / 50 Hz socket!
- Read the manufacturer’s warnings for the battery you are charging to avoid damaging it.
- Never charge a faulty or frozen battery!
- Only use in well-ventilated areas! During charging, the battery may heat up and release toxic and explosive gases. This is a natural phenomenon. Ventilate, do not inhale, do not stand in the immediate vicinity! Do not use sparks, open flames or smoke. Attention! Risk of explosion!
- Do not cover the appliance and ensure free air circulation when installing it! Covering may cause overheating, fire hazard, electric shock!
- A possible blockage of the connectors is a fire, explosion and electric shock hazard! Do not touch them to each other or to metal objects!
- Children are not allowed near the battery!
- Batteries that cannot be charged must not be charged! Risk of explosion!
- Do not have any consumer connected to the battery while charging! Disconnect the battery from the vehicle or other equipment before.
- After use, unplug the power cord from the mains!
- Do not operate without supervision! The only exception to this is the maintenance charging mode.
- Position the appliance so that the plug is easily accessible and can be pulled out. Route the connection cable so that it cannot be accidentally pulled out or tripped over! Do not route the connecting cable under carpets, mats, etc.
- Do not place objects filled with liquid, such as a glass, on the appliance!
- Open flame sources, such as burning candles, must not be placed on the appliance!
- Do not operate from a voltage converter (inverter)!

- Forbidden for use in road, water and air vehicles!
- In some countries, national regulations may govern its use for health reasons!
- The connections must be stable and free of locks.
- Make sure that the insulation of the connection cables is not damaged when you run them.
- Do not use if any of the connecting cables or the cover is damaged!
- Plug the mains plug into the wall socket and do not use an extension cord or power strip!
- In hot environments, you can switch off the overheating protection more often.
- Protect from dust, moisture, liquid, humidity, frost, impact and direct heat or sunlight.
- Do not dismantle or modify the appliance as this may cause fire, accident or electric shock!
- Never throw the battery into a fire or short-circuit its outlets! Risk of explosion!
- Because of the presence of mains voltage, observe the usual life safety rules! Do not touch the appliance or the connection cable with wet hands!
- This device can only be used to charge the specified battery types! It is forbidden to use it as a power supply to operate a device!
- Non-compliant installation or improper use will void the warranty.
- This product is for residential use, not industrial-commercial use.
- If the product has reached the end of its useful life, it is considered hazardous waste. It must be disposed of in accordance with local regulations.
- Due to continuous improvements, technical specifications and design are subject to change without notice. The current instructions for use can be downloaded from www.somogyi.hu.

  Caution: Risk of electric shock! Do not attempt to disassemble of modify the unit or its accessories. In case any part is damaged, immediately power off the unit and seek the assistance of a specialist.

  In the event that the power cable should become damaged, it should only be replaced by the manufacturer, its service facility or similarly qualified personnel.

CLEANING

Before cleaning, switch off the power and unplug the power cord. Use a soft, dry cloth. Do not use aggressive cleaning agents or liquids. Use a cloth slightly dampened with water to remove stubborn dirt, then wipe the surface dry. If necessary, use a little soap. After each filling, wipe the clips and contacts to prevent corrosion.

MAINTENANCE

Before each use, check the integrity of the connection cables and the enclosure. In the event of any abnormality, immediately disconnect the power supply and consult a qualified electrician.

DISPOSAL

Waste equipment must be collected and disposed separately from household waste because it may contain components hazardous to the environment or health. Used or waste equipment may be dropped off free of charge at the point of sale, or at any distributor which sells equipment of identical nature and function. Dispose of product at a facility specializing in the collection of electronic waste. By doing so, you will protect the environment as well as the health of others and yourself. If you have any questions, contact the local waste management organization. We shall undertake the tasks imposed upon the manufacturer pursuant to the relevant regulations and shall bear all associated costs arising from such.

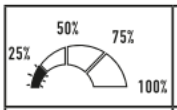
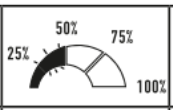
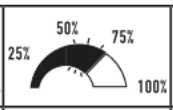
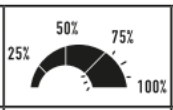
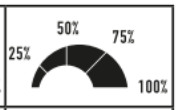
CHARACTERISTICS

- For 6V and 12V batteries
- conventional lead-acid and sealed, maintenance-free for gel or glass-fibre types, as well as the latest Li-ion and LiFePO4 types
- manual type selection
- automatic SMART charging programs
- low-current, battery-saving charging (2A)
- maintenance, maintenance, regeneration charging
- detects sulphation and acid stratification, and then restores lost capacity for 12V lead-acid types• memory in case of power failure
- with interchangeable charging connector (clip or ring)
- clear LCD display with voltmeter
- highly protected against dust and water dust and water resistant IP65
- reverse polarity protection
- short circuit protection
- overcharge protection
- overheat protection
- battery failure protection
- timeout protection
- power supply with mains plug cable

WHICH BATTERIES CAN BE CHARGED WITH THIS CHARGER?

- **6 Volt:** lead-acid (LEAD ACID, WET), gel (GEL), VRLA GEL, AGM, MF
- **12 Volt:** lead-acid (LEAD ACID, WET), gel (GEL), VRLA GEL, AGM, MF, Li-ion, LiFePO4

Signal	the type of battery	charging voltage
6 V	6 V LEAD ACID / WET / GEL / VRLA GEL / MF	7.10 ± 0.2 V
6 V AGM	6 V AGM	7.50 ± 0.2 V
12 V	12 V LEAD ACID / WET / GEL / VRLA GEL / MF	14.10 ± 0.2 V
12 V AGM	12 V AGM	14.60 ± 0.2 V
12 V Li	12 V Li-ion	12.60 ± 0.2 V
12 V Li-Fe	12 V Li-FePO4	14.40 ± 0.2 V

				
charging to 25%	charging to 50%	charging to 75%	charging to 100%	charging ready, maintenance mode

error message	the meaning of the error message	solution to the error
	Reverse battery polarity.	Replace the + / - wires!
	The battery voltage cannot be detected. E.g. too low.	Check that the battery is functional and not damaged!

PREPARATION OF THE CHARGING

WARNING! ALWAYS DISCONNECT FROM THE MAINS BEFORE CONNECTING TO OR DISCONNECTING FROM THE BATTERY!

- Do not use on defective, neglected, worn or frozen batteries.
- Sealed batteries should only be charged with an automatic charger such as this, otherwise they may fail or explode due to overcharging. When charging conventional batteries, the plugs of the liquid filling openings must be removed to allow the gases produced to escape.
- The properties of different types of batteries vary considerably. They have different charging characteristics and require different care. This charger combines several charging methods, making it suitable for safe charging of many types. Batteries should not be allowed to run down completely, because if the terminal voltage falls below a certain level, chemical processes are triggered which will destroy the battery. when not in use store in a safe, freeze-proof place, periodic recharging is recommended. Check the instructions for your battery.
- Clean the battery terminals with a soft, slightly damp cloth, then wipe dry. In case of a conventional lead-acid battery, remove the caps from the cells and fill the cells with distilled water to the level specified by the manufacturer.
- Do not replace the sealing caps to allow gases generated during charging to escape. However, care-free batteries are sealed. Always follow the battery manufacturer’s instructions.
- Place the charger as far away from the battery as the wiring will allow. Gases or acid splashes can damage the charger. Never place the charger under/on/next to the battery! Do not place anything on top of the charger, do not cover it and ensure free air flow around it. WARNING! Danger of explosion! A spark or flame may cause toxic gases produced during charging to explode and must be prevented! Do not move the cables or switch on

any electrical devices in the vicinity while charging! Ensure necessary and adequate ventilation during charging!

CONNECTING THE BATTERY AND CHARGER

- When connecting or removing the clips, the charger must be disconnected from the power supply by unplugging it from the wall socket. Never touch the clips to each other or to metal objects! Do not face the battery and move away from it before connecting the charger to the mains. It is usually easier to attach the open clip to the pole from above than to connect it from the side. Colour coding red: positive (+), black: negative (-)
- If the battery is in the vehicle***
- Remove the original battery terminals (the pole connected to the body first – usually the negative) so that the battery is not in electrical contact with the vehicle. This will protect the vehicle's electronics and shorten the charging time. Make sure you have disconnected all equipment and removed the ignition key. A spark can cause toxic gases to explode during charging. It is therefore particularly dangerous to charge the battery while it is left in the vehicle. Do not move the cables, the bonnet, the doors or switch on any devices in the vehicle while charging, and do not start the engine. Beware of moving, rotating, sharp parts, belts, cables, fans! Place the charger as far away from the vehicle as the wiring will allow!
- Check the polarity of the battery contacts. Usually the positive (+/red) terminal is larger in diameter than the negative (-/black) terminal.
    1. Connect the clip-on connector cable to the charger cable.
    2. Connect the positive clip (+/red) to the positive terminal of the battery.
    3. Connect the negative clip (- / black) to the negative terminal of the battery.
    4. Plug the power cord into the mains and the charger is ready to use.
    5. The display shows if the battery is connected upside down or if the battery is faulty.
    6. Select the desired charging mode (battery type) by pressing the MODE button firmly. If you want to change the set mode while charging, disconnect the battery and reconnect it after a short time.
    7. The display shows the charging process. The symbol stops flashing when charging is complete. Depending on the battery type, capacity and conditions, this can take up to 25-35 hours. When charging is complete, disconnect the charger from the mains and remove the clips in reverse order. Remove the negative (-/black) clip first, then the positive (+/red) clip.
    8. If you do not remove the clips, the charger will maintain the maximum charge until the battery is used.
- The above procedure is recommended by the manufacturer of the device to increase safety. We do not permit charging the battery while it is left in the vehicle and connected to the vehicle's electrical system in its original state. However, in accordance with the relevant standard (EN 60335-2-29), the following method should also be included in these instructions: first connect the charger to the pole not connected to the bodywork. The other pole should then be connected to the bodywork, away from the battery and the fuel system. Only then can the charger be connected to the mains. After charging, the charger must first be disconnected from the mains, then the pole connected to the bodywork must be removed first, followed by the other pole connected to the battery.
- If the battery is not in the vehicle
- The connection procedure is the same as described in detail above. Charging can be paused or interrupted at any time. Unplug the power cord from the wall and resume charging later. If the battery is not disconnected from the charger, charging will resume from the point where it was interrupted. This will also help in the event of a power cut. Otherwise, you will need to reset the desired mode using the MODE button.

THE CHARGING CYCLES

- This professional charger has several charging modes. It runs a diagnostic program once connected to the network. It checks the correct polarity of the connected battery, its possible sulphated state, its current condition and the functionality of the charger. If necessary, it automatically starts the desulphation process, which tries to increase the reduced capacity of the worn 12V lead-acid battery and regenerate the battery.
- It starts charging according to the manually selected battery type and its current state. The charging current is initially low, then ramps up as the voltage increases and decreases again as needed. The charging current is max.2A, this ensures gentle charging of all batteries, avoiding overheating, to achieve a longer battery life. When the battery reaches its maximum capacity, it switches to maintenance/maintenance charging with a low charging current.
- This completes the charge.
- If the battery is left connected to the charger for a long time, the self-discharge is compensated by the sustained charge. This method ensures that the battery can be used fully charged after a longer period of time.
- Charging time depends on the battery type, capacity, current state, charging mode and ambient temperature. Different types of batteries work differently. It is therefore important to follow the warnings of their manufacturers.
- If the battery is not fully charged after a long period of time, the charger will indicate that it has failed to charge after 60 hours. Some batteries may be old or worn out and cannot take the required amount of charge and therefore cannot be fully charged.
- In the event of a power failure – or if you accidentally unplug the charger while charging – charging will stop. When reconnected, the charging process will resume where it left off. This will only happen if you do not remove the battery from the charger. Therefore, do not remove the battery until the complete charging process has been completed.

PRECAUTIONS

- If the battery is already fully charged after the normal charge, the battery is fully charged. The charger will maintain the maximum charge. The charger can be connected to an unused battery for up to months. For this purpose, a screwable 10 mm bore ring connector is supplied with the clips. However, monitoring and checking the charge is recommended. It is not recommended to leave the device unattended for extended periods.
- If you work/stay near a lead-acid battery, always have someone nearby who can help. Wash off any acid that may come into contact with skin with plenty of soap and water. Take particular care not to get any corrosive liquid in the eyes. If it does get in the eyes, wash immediately with plenty of cold running water for at least 10 minutes and seek medical attention. Children must not be near and/or operate the appliance! Safety goggles, gloves and protective clothing must be worn. Do not touch your face or eyes when working with the battery. Attention! If the battery has spilled acid, wear protective gloves and clean the contaminated surface with a dry cloth!
- Beware of dropping a metal tool on the battery or the chips of the charger. This can cause a short circuit and/or spark and explosion. Do not wear metal objects (rings, bracelets, watches, necklaces…). A short-circuit with a high current can cause burns!
- Only charge the battery in a well-ventilated, dry place!
- Monitor the process, but not at close range! If the battery becomes very hot or if there is significant gas formation, disconnect it from the mains and continue charging later! The possibility of heating and gassing is reduced if the device switches to maintenance charging, thereby significantly reducing the charging current.

TROUBLESHOOTING

If the charger still does not switch to maintenance charging after 3 days after a full charge, a fault may have occurred.

Possible reasons:

- The battery is probably worn out and needs replacing.
- Batteries with high antimony content may behave differently, sometimes allowing the charger to charge for too long, which can lead to overcharging. Take care to avoid this!
- A sulphated, aged battery will take a long time to recharge, making it difficult to charge. A heavily worn battery cannot be fully charged. You should therefore always make sure that the charger is switched to maintenance mode after charging is complete before leaving it switched on and unattended. If the maintenance mode works, everything is OK. If the charger does not switch to maintenance mode after 3 days, the battery is probably no longer usable and needs to be replaced.
  If the device does not charge, the following situations may occur:
- No power; check the power and charging cable connectors.
- The fault indicator is lit because the polarity is reversed or the battery voltage is too low.
- The battery may be faulty.
- The tweezers are not in good contact or a blockage has occurred.
- It is possible that the charging mode is not selected for the battery.

SPECIFICATION

6V BATTERY COMPATIBILITY	
LEAD-ACID, WET, MF, GEL, VRLA GEL	Charger Voltage: 7.10 ± 0.2 V
AGM	Charger Voltage: 7.50 ± 0.2 V
12V BATTERY COMPATIBILITY	
LEAD-ACID, WET, MF, GEL, VRLA GEL	Charger Voltage: 14.10 ± 0.2 V
AGM	Charger Voltage: 14.60 ± 0.2 V
Li-ion	Charger Voltage: 12.60 ± 0.2 V
LiFePO4	Charger Voltage: 14.40 ± 0.2 V
GENERAL PARAMETERS	
Output DC Voltage	6 V / 12 V
Activated Voltage	4 V / 7.5 V
Typical charging current	0.5 A / 1.8 A
Charging current	2 A max.
Voltmeter range	3.0 – 19.9 V
Ring terminal inside diameter	Æ10 mm
LCD	back lighted display
Power off memory	yes
Ingress protection class	IP65
Input AC Voltage	100-240 V~ 50/60 Hz
Tambient	5 °C … +35 °C
Dimensions	150 x 42 x 65 mm
Weight	230 g

ABOUT COMPANY

- **Producer** SOMOGYI ELEKTRONIC®

- H – 9027
- Győr, Gesztenyefa út 3.
- www.somogyi.hu

- **Distribútor:** SOMOGYI ELEKTRONIC SLOVENSKO s. r. o.
  - Ul. gen. Klapku 77, 945 01 Komárno, SK
  - Tel.: +421/0/35 7902400
  - www.somogyi.sk
- **Distribuitor:** S.C. SOMOGYI ELEKTRONIC S.R.L.
  - J12/2014/13.06.2006 C.U.I.: RO 18761195
  - Cluj-Napoca, judeţul Cluj, România, Str. Prof. Dr. Gheorghe Marinescu, nr. 2, Cod poştal: 400337
  - Tel.: +40 264 406 488,
  - Fax: +40 264 406 489
  - www.somogyi.ro
- **Uvoznik za SRB: ELEMENTA d.o.o.**
  - **Jovana Mikića 56, 24000 Subotica, Srbija**
    - Tel:+381(0)24 686 270
    - www.elementa.rs
  - **Zemlja uvoza: Mađarska**
    - Zemlja porekla: Kina
    - Proizvođač: Somogyi Elektronic Kft.
  - **Uvoznik za HR: ZED d.o.o.**
    - Industrijska c. 5, 10360 Sesvete, Hrvatska
    - Tel: +385 1 2006 148
    - www.zed.hr
  - **Uvoznik za BiH: DIGITALIS d.o.o.**
    - M.Spahe 2A/30, 72290 Novi Travnik, BiH
    - Tel: +387 61 095 095
    - www.digitalis.ba

Documents / Resources

	home SMC 20 Sensor Module [pdf] Instruction Manual SMC 20 Sensor Module, SMC 20, Sensor Module, Module

References

- Zed d.o.o.
- User Manual